

1. An apparatus for managing incremental storage, the apparatus comprising:
a storage pool management module configured to allocate storage volumes to a virtual volume; and
an incremental log corresponding to the virtual volume, the incremental log configured to map a virtual address to a storage address.
2. The apparatus of claim 1, wherein the storage address comprises a volume identifier.
3. The apparatus of claim 2, wherein the storage address further comprises a block identifier.
4. The apparatus of claim 3, wherein the block identifier is a logical block identifier.
5. The apparatus of claim 1, wherein the storage pool management module is further configured to monitor available space on the storage volumes.
6. The apparatus of claim 1, wherein the storage pool management module is further configured to allocate a second storage volume to the virtual volume in response to a reduction in available space on a first storage volume.
7. The apparatus of claim 1, wherein the storage volumes comprise at least one volume corresponding to a redundant set of storage devices.
8. The apparatus of claim 7, wherein the redundant set of storage devices comprises a RAID (Redundant Array of Independent Disks) storage array.
9. The apparatus of claim 1, wherein the incremental log comprises a lookup table.

10. The apparatus of claim 1, further comprising a stripe map configured to store the storage address.

11. The apparatus of claim 1, wherein the incremental log is further configured to append a storage address mapping in response to a write operation.

12. A method for managing incremental storage, the method comprising:

- allocating storage volumes to a virtual volume;
- appending a storage address mapping to an incremental log corresponding to the virtual volume in response to a write operation; and
- mapping a virtual address to a storage address in response to a read operation.

13. The method of claim 12, further comprising providing incremental snapshot data of a source volume in response to a replication operation.

14. The method of claim 12, further comprising monitoring storage availability on the storage volumes.

15. The method of claim 12, wherein allocating storage volumes to a virtual volume comprises assigning a second storage volume to the virtual volume in response to a reduction in available space on a first storage volume.

16. A system for managing incremental storage, the system comprising:
 - at least one baseline volume;
 - a pool of storage volumes;
 - a storage pool management module configured to allocate storage volumes from the pool of storage volumes to a virtual volume; and
 - an incremental log corresponding to the virtual volume, the incremental log configured to map a virtual address to a storage address.
17. The system of claim 16, further comprising a replication module configured to transmit replicated data from a source volume to the virtual volume.
18. The system of claim 16, wherein the replicated data comprises incremental snapshot data of the source volume.
19. The system of claim 16, wherein the storage address comprises a volume identifier and a block identifier.
20. The system of claim 16, wherein the storage pool management module is further configured to monitor available space on the storage volumes.
21. The system of claim 16, further comprising a policy management module configured to control operation of the storage pool management module.
22. The system of claim 16, wherein the incremental log is further configured to append a storage address mapping in response to a write operation.

23. An apparatus for managing incremental storage, the apparatus comprising:
- means for allocating storage volumes to a virtual volume;
 - means for appending a storage address mapping to an incremental log in response to a write operation; and
 - means for mapping a virtual address to a storage address in response to a read operation.
24. A computer readable storage medium comprising computer readable program code for managing incremental storage, the program code configured to:
- allocate storage volumes to a virtual volume;
 - append a storage address mapping to an incremental log in response to a write operation; and
 - map a virtual address to a storage address in response to a read operation.
25. The computer readable storage medium of claim 24, wherein the program code is further configured to provide incremental snapshot data of a source volume in response to a replication operation.
26. The computer readable storage medium of claim 24, wherein the program code is further configured to assign a second storage volume to the virtual volume in response to a reduction in available space on a first storage volume.

27. An apparatus residing in a host for managing incremental storage, the apparatus, comprising:

a policy management module residing in the host;

the policy management module configured to communicate with a storage pool management module in order to control an allocation of storage volumes to a virtual volume; and

the policy management module further configured to communicate with an incremental log corresponding to the virtual volume to control a mapping of a virtual address to a storage address.